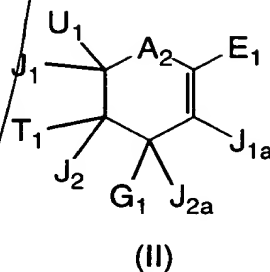
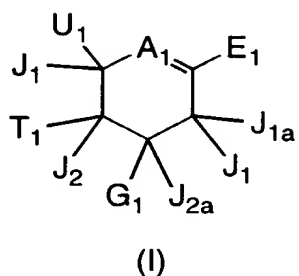


What is Claimed Is:

1. A composition comprising a compound of formula (I) or (II):



5 wherein

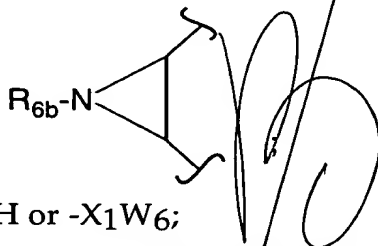
A1 is -C(J1)=, or -N=;

A2 is -C(J1)2-, -N(J1)-, -N(O)(J1)-, -N(O)=, -S-, -S(O)-, -S(O)2- or -O-;

E1 is -(CR1R1)m1W1;

G1 is N3, -CN, -OH, -OR6a, -NO2, or -(CR1R1)m1W2;

- 10 T1 is -NR1W3, a heterocycle, or is taken together with U1 or G1 to form a group having the structure



U1 is H or -X1W6;

J1 and J1a are independently R1, Br, Cl, F, I, CN, NO2 or N3;

- 15 J2 and J2a are independently H or R1;

R1 is independently H or alkyl of 1 to 12 carbon atoms;

R2 is independently R3 or R4 wherein each R4 is independently substituted with 0 to 3 R3 groups;

- 20 R3 is independently F, Cl, Br, I, -CN, N3, -NO2, -OR6a, -OR1, -N(R1)2, -N(R1)(R6b), -N(R6b)2, -SR1, -SR6a, -S(O)R1, -S(O)2R1, -S(O)OR1, -S(O)OR6a, -S(O)2OR1, -S(O)2OR6a, -C(O)OR1, -C(O)R6c, -C(O)OR6a, -OC(O)R1, -N(R1)(C(O)R1), -N(R6b)(C(O)R1), -N(R1)(C(O)OR1), -N(R6b)(C(O)OR1), -C(O)N(R1)2, -C(O)N(R6b)(R1), -C(O)N(R6b)2, -C(NR1)(N(R1)2), -C(N(R6b))(N(R1)2), -C(N(R1))(N(R1)(R6b)), -C(N(R6b))(N(R1)(R6b)), -C(N(R1))(N(R6b)2), -C(N(R6b))(N(R6b)2), -N(R1)C(N(R1))(N(R1)2), -N(R1)C(N(R1))(N(R1)(R6b)), -N(R1)C(N(R6b))(N(R1)2), -N(R6b)C(N(R1))(N(R1)2), -N(R6b)C(N(R6b))(N(R1)2), -N(R6b)C(N(R1))(N(R1)(R6b)), -N(R1)C(N(R6b))(N(R1)(R6b)), -N(R1)C(N(R1))(N(R6b)2), -N(R6b)C(N(R6b))(N(R1)(R6b)),
- 25

$-N(R_{6b})C(N(R_1))(N(R_{6b})_2)$, $-N(R_1)C(N(R_{6b}))(N(R_{6b})_2)$,
 $-N(R_{6b})C(N(R_{6b}))(N(R_{6b})_2)$, $=O$, $=S$, $=N(R_1)$ or $=N(R_{6b})$;

R_4 is independently alkyl of 1 to 12 carbon atoms, alkenyl of 2 to 12 carbon atoms, or alkynyl of 2 to 12 carbon atoms;

R_5 is independently R_4 wherein each R_4 is substituted with 0 to 3 R_3 groups;

R_{5a} is independently alkylene of 1 to 12 carbon atoms, alkenylene of 2 to 12 carbon atoms, or alkynylene of 2-12 carbon atoms any one of which alkylene, alkenylene or alkynylene is substituted with 0-3 R_3 groups;

R_{6a} is independently H or a protecting group for hydroxyl or thio;

R_{6b} is independently H, a protecting group for amino or the residue of a carboxyl-containing compound;

R_{6c} is independently H or the residue of an amino-containing compound;

W_1 is a group comprising an acidic hydrogen, a protected acidic group, or an R_{6c} amide of the group comprising an acidic hydrogen;

W_2 is a group comprising a basic heteroatom or a protected basic heteroatom, or an R_{6b} amide of the basic heteroatom;

W_3 is W_4 or W_5 ;

W_4 is R_5 or $-C(O)R_5$, $-C(O)W_5$, $-SO_2R_5$, or $-SO_2W_5$;

W_5 is carbocycle or heterocycle wherein W_5 is independently substituted with 0 to 3 R_2 groups;

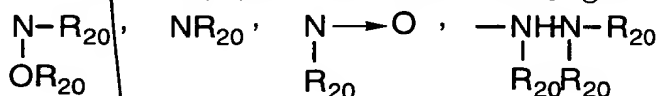
W_6 is $-R_5$, $-W_5$, $-R_{5a}W_5$, $-C(O)OR_{6a}$, $-C(O)R_{6c}$, $-C(O)N(R_{6b})_2$, $-C(NR_{6b})(N(R_{6b})_2)$, $-C(NR_{6b})(N(H)(R_{6b}))$, $-C(N(H)(N(R_{6b})_2))$, $-C(S)N(R_{6b})_2$, or $-C(O)R_2$;

X_1 is a bond, $-O-$, $-N(H)-$, $-N(R_5)-$, $-N(OH)-$, $-N(OR_5)-$, $-N(NH_2)-$, $-N(N(H)(R_5))-$, $-N(N(R_5)_2)-$, $-N(H)N(R_5)-$, $-S-$, $-SO-$, or $-SO_2-$; and

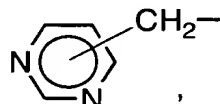
each m_1 is independently an integer from 0 to 2;

provided, however, that compounds are excluded wherein:

- (a) A_1 is $-CH=$ or $-N=$ and A_2 is $-CH_2-$;
- (b) E_1 is $COOH$, $P(O)(OH)_2$, $SOOH$, SO_3H , or tetrazol;
- (c) G_1 is CN , $N(H)R_{20}$, N_3 , SR_{20} , OR_{20} , guanidino,



- or -

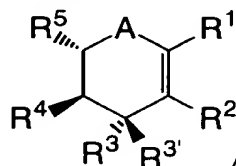


- (d) T₁ is -NHR₂₀;
 (e) R₂₀ is H; an acyl group having 1 to 4 carbon atoms; a linear or cyclic alkyl group having 1 to 6 carbon atoms, or a halogen-substituted analogue thereof; an allyl group or an unsubstituted aryl group or an aryl substituted by a halogen, an OH group, an NO₂ group, an NH₂ group or a COOH group;
 (f) J₁ is H and J_{1a} is H, F, Cl, Br or CN;
 (g) J₂ is H and J_{2a} is H, CN or N₃;
 (h) U₁ is CH₂YR_{20a}, CHYR_{20a}CH₂YR_{20a} or CHYR_{20a}CHYR_{20a}CH₂YR_{20a};
 (i) R_{20a} is H or acyl having 1 to 4 carbon atoms;
 (j) Y is O, S, H or NH;
 (k) 0 to 2 YR_{20a} are H, and
 (l) successive Y moieties in a U₁ group are the same or different, and when Y is H then R_{20a} is a covalent bond, and the pharmaceutically acceptable salts and solvates thereof;

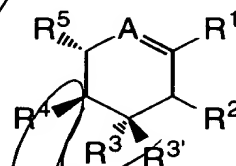
and the salts, solvates, resolved enantiomers and purified diastereomers thereof.

2. A method of inhibiting the activity of neuraminidase comprising the step of contacting a sample suspected of containing neuraminidase with the composition of Claim 1.

3. A method of treatment or prophylaxis of influenza virus infection in a host comprising administration to the host, by a route other than topically to the respiratory tract, of a therapeutically effective dose of an antivirally active compound of the formula:



(x)



(y)

wherein:

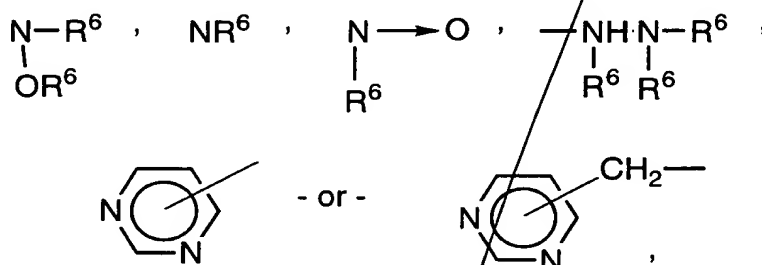
in general formula (x), A is oxygen, carbon or sulphur, and in general formula (y), A is nitrogen or carbon;

R^1 denotes COOH , P(O)(OH)_2 , NO_2 , SOOH , SO_3H , tetrazol, CH_2CHO , CHO or CH(CHO)_2 ,

R^2 denotes H , OR^6 , F , Cl , Br , CN , NHR^6 , SR^6 , or CH_2X , wherein X is NHR^6 , halogen or OR^6 and

R^6 is hydrogen; an acyl group having 1 to 4 carbon atoms; a linear or cyclic alkyl group having 1 to 6 carbon atoms, or a halogen-substituted analogue thereof; an allyl group or an unsubstituted aryl group or an aryl substituted by a halogen, an OH group, an NO_2 group, an NH_2 group or a COOH group,

R^3 and $R^{3'}$ are the same or different, and each denotes hydrogen, CN , NHR^6 , N_3 , SR^6 , $=\text{N-OR}^6$, OR^6 , guanidino,



R^4 denotes NHR^6 , SR^6 , OR^6 , COOR^6 , NO_2 , $\text{C(R}^6)_3$, CH_2COOR^6 , CH_2NO_2 or CH_2NHR^6 , and

R^5 denotes CH_2YR^6 , $\text{CHYR}^6\text{CH}_2\text{YR}^6$ or $\text{CHYR}^6\text{CHYR}^6\text{CH}_2\text{YR}^6$, where Y is O , S , NH or H , and successive Y moieties in an R^5 group are the same or different,

and pharmaceutically acceptable salts or derivatives thereof, provided that in general formula (x)

(i) when R^3 or $R^{3'}$ is OR^6 or hydrogen, and A is oxygen or sulphur, then said compound cannot have both

(a) an R^2 that is hydrogen and

(b) an R^4 that is NH-acyl , and

(ii) R^6 represents a covalent bond when Y is hydrogen, and that in general formula (y),

(i) when R^3 or $R^{3'}$ is OR^6 or hydrogen, and A is nitrogen, then said compound cannot have both

(a) an R^2 that is hydrogen, and

(b) an R^4 that is NH-acyl , and

(ii) R^6 represents a covalent bond when Y is hydrogen.

4. The composition of Claim 1 where further excluded are compounds wherein G_1 is $-N(R_{21})C(=N(R_{21}))N(R_{21})_2$ and R_{21} is independently H, C₁-C₆ alkyl, C₃-C₈ cycloalkyl, C₁-C₆ alkoxy, aryl, aralkyl, aryloxy, aralkyloxy, amino, hydroxy, cyano, nitro, COR₂₂, CO₂R₂₂, SO₂R₂₂ (where R₂₂ is C₁-C₆ alkyl or aralkyl), or CONR₂₃ (where R₂₃ is independently H or C₁-C₆ alkyl or aralkyl).

5. The composition of claim 1 wherein X_1 is a bond and W_6 is neither C₁-C₃ normal alkyl nor C₁-C₃ normal alkyl substituted with 1 to 3 OH, SH or NH₂.

6. The composition of claim 1 wherein X_1 is a bond and W_6 is neither C₁-C₃ normal alkyl nor C₁-C₃ normal alkyl substituted with 1 to 3 OH, SH or NH₂.

7. The composition of claim 1 wherein X_1 is a bond and W_6 is neither C₁-C₃ normal alkyl nor C₁-C₃ normal alkyl substituted with 1 to 3 OH, OR_{6a}, SH or NH₂, wherein this R_{6a} is a protecting group.

8. The composition of claim 1 wherein X_1 is a bond and W_6 is neither C₁-C₃ normal alkyl nor C₁-C₃ normal alkyl substituted with 1 to 3 OH, OR_{6a}, SH or NH₂, wherein this R_{6a} is a protecting group.

9. The composition of claim 1 wherein the proviso further excludes compounds wherein G_1 is $(alk)_{m_4}NR^{6b}R^{7b}$;

alk is unsubstituted or substituted methylene;

m_4 is 0 or 1;

R^{6b} is hydrogen, C₁-6alkyl, aryl, aralkyl, amidine, $NR^{7b}R^{8b}$, or an unsaturated or saturated ring containing one or more heteroatoms;

R^{7b} is hydrogen, C₁-6alkyl, or allyl, or $NR^{6b}R^{7b}$ forms an optionally substituted 5 or 6 membered ring optionally containing one or more additional heteroatoms; and

R^{8b} is hydrogen or C₁-6alkyl.

10. The composition of claim 9 wherein the proviso further excludes compounds wherein G_1 is $NR^{6b}R^{7b}$.

11. The composition of claim 1 wherein W_6 is C₁-C₃ alkyl substituted with 1 to 3 OR_{6a} or SR_{6a}, which OR_{6a} or SR_{6a} groups are stable to hydrolysis in gastrointestinal fluid.
- 5 12. The composition of claim 1 wherein if W_6 is substituted with R₃ and R₃ is substituted with OR_{6a} then this R_{6a} is not acetyl.
13. The composition of claim 1 wherein W_6 is $-(CH_2)_{m1}CH((CH_2)_{m3}R_3)_2$, $-(CH_2)_{m1}C((CH_2)_{m3}R_3)_3$; $-(CH_2)_{m1}CH((CH_2)_{m3}R_5aW_5)_2$;
10 $-(CH_2)_{m1}CH((CH_2)_{m3}R_3)((CH_2)_{m3}R_5aW_5)$;
 $-(CH_2)_{m1}C((CH_2)_{m3}R_3)_2(CH_2)_{m3}R_5aW_5$, $(CH_2)_{m1}C((CH_2)_{m3}R_5aW_5)_3$ or $-(CH_2)_{m1}C((CH_2)_{m3}R_3)((CH_2)_{m3}R_5aW_5)_2$ and m_3 is an integer from 1 to 3.
14. The composition of Claim 1 wherein X₁ is a bond and W_6 is -R₅, -W₅ or -R_{5a}W₅.
15
15. The composition of Claim 1 having Formula (I) wherein A₁ is -C(J₁)=, X₁ is a bond and W_6 is R₅.
- 20 16. The composition of Claim 15 wherein said R₅ is R₄ substituted with 0 to 3 -OR₁.
17. The composition of Claim 15 wherein said R₅ is R₄ substituted with 0 to 3 -NO₂ or N₃ groups.
25
18. The composition of Claim 16 wherein said -OR₁ is present and at least one of said R₁ is C₄-C₁₂.
19. The composition of Claim 1 wherein U₁ is -N(R₅)₂, -N(H)(CH(R_{5b})₂),
30 -N(H)(CH₂CH(R_{5c})₂), -N(OR₅)(R₅), -N(N(H)(R₅))(R₅), -N(H)(N(R₅)₂),
-N(R₅)(C(O)R₅), -C(O)N(R₅)₂, -C(S)N(R₅)₂, -OR_{5d}, -OCH(R_{5b})₂,
-OCH₂CH(R_{5c})₂, -SR_{5d}, -SCH(R_{5b})₂, -SCH₂CH(R_{5c})₂, -S(O)R_{5d},
-S(O)CH(R_{5b})₂, -S(O)CH₂CH(R_{5c})₂, -S(O)₂R_{5d}, -S(O)₂CH(R_{5b})₂,
-S(O)₂CH₂CH(R_{5c})₂, -C(N(R₅))(N(H)(R₅)), -C(O)R_{5d}, -C(O)CH(R_{5b})₂ or
35 -C(O)CH₂CH(R_{5c})₂; and
wherein:
hydrogen of said U₁ -CH₂- or -CH- moieties optionally is substituted with -OR₁, -SR₁, NO₂, N₃, F, -CN, Cl or Br;
R_{5b} is independently alkyl of 1 to 11 carbon atoms, alkenyl of 2 to

11 carbon atoms or alkynyl of 2 to 11 carbon atoms any one of which alkyl, alkenyl or alkynyl groups is substituted with 0 - 3 R₃ groups;

R_{5c} is independently alkyl of 1 to 10 carbon atoms, alkenyl of 2 to 10 carbon atoms or alkynyl of 2 to 10 carbon atoms any one of which alkyl, alkenyl or alkynyl groups is substituted with 0 - 3 R₃ groups;

R_{5d} is a branched R₅ group; and

wherein if R₅, R_{5b}, R_{5c} or R_{5d} is substituted with 1 - 3 R₃ groups then R₃ is -OR₁, -SR₁, NO₂, N₃, F, -CN, Cl or Br.

20. The composition of claim 1 having Formula (I) wherein A₁ is -C(J₁)=, and W₆ is a branched chain R₄ group of 3 to 8 carbon atoms.